Canada's
Transportation Problem from a
National Standpoint.

The
Short Line Railway
over the Portage from Toronto
to Georgian Bay.

The Board of Trade of the City of Toronto

MAY, 1900

Canada's
Transportation Problem from a
National Standpoint.

The
Short Line Railway
over the Portage from Toronto
to Georgian Bay.

The Board of Trade of the City of Toronto

MAY, 1900

2-2550

52239

Canada's Transportation Problem

FROM A NATIONAL STANDPOINT.

The Short Line Railway over the Portage from Toronto to Georgian Bay.

The transportation problem is brought forcibly to the attention of the people of Canada with each recurring harvest, when every available means of reaching the seaboard with the season's yield of grain is taxed to its utmost capacity. At that time but little public attention is bestowed on the question of routes and their equipment from a national standpoint, and with the shippers there is nothing but crowding and scrambling to reach the markets of Britain by any route. Every vessel, every railway line and every piece of rolling stock available is pressed into the service; yet despite the greatest efforts and the monetary loss and waste unavoidable in straining the capacity of transportation services a part of the harvest is always caught by the "winter rates," which discourage shipment or sale till the following season of navigation.

Prominent Canadians have cast about in many directions for relief from this periodical congestion of traffic, even to the icy shoals of Hudson's Bay. That route, according to the maps and charts, is the shortest between the wheat fields of the west and the British seaports, for it avoids the great southern detours of existing routes. But even without the drawback of the long land haul that would militate against this northern course the decrees of nature are unfortunately against it. Explorations show that the ice comes in and closes it to navigation at the very time when it would be most in demand for the shipment of the Canadian harvest.

In considering this problem from a national standpoint we must not be carried away by national sentiment, but must be guided by common sense and sound business principles. If we ignore the natural conditions with which we are surrounded our otherwise well laid plans will come to naught. Nature in her changing seasons, her seed time and harvest, her inscrutable laws, takes no account of national sentiments and aspirations, so we must conform to her decrees in all things if we would accomplish anything of permanent value. We must take a practical view of the means and resources at our disposal, and of the objects to be accomplished.

THE BIRD'S EYE VIEW OF LAND AND WATER

The great wheat area of the Canadian west is north of the 49th parallel of latitude, and the British ports to be reached are in about the same latitude as Winnipeg. The Great Lakes and the St. Lawrence, which form the natural waterway from the wheat areas of Canada and the wheat zone of the United States, make a long detour south of the 42nd parallel, and the thousand odd miles thus added to the distance from point to point is augmented by the natural irregularities of the waterway. But it is idle to complain of nature's handiwork. We must adopt our plans to her works, and make the best possible use of them. The grain is now carried still further south than the natural waterway, and dips below the 41st parallel at New York. In considering transportation problems geographical conformation is of prime importance, but topographical maps are not the only guides to be consulted. The industrial and commercial conformation of the country must be taken into account, as also the broader interests of the general public. A course touching or convenient to the leading *commercial and industrial* centres, and traversing a thickly populated section of the country, requiring local supplies, and producing abundantly for shipment, has advantages that must be taken into account, and may be weighed against the claims of mileage or speed.

National considerations must also have weight, and it may be well to remember that a nation's advancement is best secured by the promotion of commercial and industrial success. It can never be a good policy to build up transportation interests at the expense of the products to be carried, but when no additional expense is incurred, and no productive industry is burdened or

discouraged, it is better that the transportation field should be exploited by Canadian enterprise.

The advantages of water transportation so far as practicable can be fully established. It can never be subjected to monopolistic control. The most comprehensive agreement as to the maintenance of freight rates may be upset at any time by the appearance of a new vessel to compete for the trade. The continuous possibility of outside competition must always be an effective regulator of rates. Vessel owners are always on the look-out for profitable traffic, and if prices along a canal route are unduly advanced competitors are certain to appear. The canals always remain public highways, open to every competitor for traffic.

Canada has already accomplished a great work in the direction of perfecting the St. Lawrence canal system, and the useful and costly property thus acquired must be taken into account in every discussion of the transportation problem. Yet we have failed to establish a Canadian highway for our immense and growing harvest.

NO CANADIANS IN THE FIELD

It is satisfactory to feel that in establishing a grain transportation route to the Atlantic we are not crowding out nor entering into injurious competition with any of our own enterprises. There is, broadly speaking, no Canadian grain route to the Atlantic. The most complete analysis of the grain routes to the Atlantic that has yet been made was the work of the Canadian deep waterways convention appointed in 1897. Taking the year 1896 as the latest for which returns were then available, it was found that the total receipts of grain (including flour at 4½ bushels to the barrel), at North Atlantic tide-water from the Chesapeake to the St. Lawrence, was 350,000,000 bushels, of which wheat and flour made up 150,000,000 bushels. Corn came next with 107,000,000 bushels, and oats, 74,000,000 bushels, the remainder being barley and rye. New York received much the largest quantity, 145,000,000 bushels, exceeding Baltimore, Boston and Philadelphia combined, and more than doubling the receipts of any other port in every kind of grain except corn, in which Baltimore and the Chesapeake (Newport News and Norfolk) approached her closely.

In view of the claim that the commercial metropolis of the United States, by virtue of its grain exchange and immense ocean

shipping, must always retain the grain export business, it may be well to point out the change which has taken place since the report of the Deep Waterways Commission was prepared.

During the fiscal year 1899, New York had only 28.8 per cent. of the American wheat export business, while New Orleans and Galveston had 16.9 per cent. each, Boston 12 per cent., Baltimore 9.4 per cent., and Philadelphia 6 per cent. This marked change in three years shows that it is a question of internal shipping facilities rather than "short" sales and established ocean lines that determines the outlet of our surplus wheat. There is no reason why Montreal and Quebec should not become in a few years the great shipping ports for the grain of Canada and the United States. If we are prepared to take the grain there the ocean vessels will be ready to carry it to the world's markets. The great increase in the size of ocean vessels has revolutionized to some extent the condition of St. Lawrence navigation between Quebec and Montreal. If the hazards of this trip are an obstacle to such vessels as the "Cymric" of the White Star Line, and the "New England" of the Dominion Line, they can be served at Quebec, where there is excellent wharfage accommodation. There will be abundant traffic for both ports, and the natural and commercial advantage of each will divide it between them.

The report of the commission showed Montreal at the foot of the list, below Boston, Philadelphia and the Chesapeake, all of which have only rail connection with the lakes or the corn belt, but although below Boston and Philadelphia in receipts, Montreal exceeds them in shipments. Here is a comparison of the receipts at Montreal and Buffalo:

	Wheat bushels	Corn bushels	Flour barrels
Buffalo.....	54,000,000	47,000,000	10,384,484
Montreal.....	9,400,000	6,600,000	1,590,000

All of Buffalo's ten million barrels of flour came by lake. Of Montreal's million and a half only 133,000 came by the St. Lawrence, while 267,000 barrels went to Ogdensburg by water. Of the total movement to tide-water of 150,000,000 bushels of wheat and its equivalent in flour, Montreal received 16,600,000 bushels, or about 11 per cent.

Of the total movement to tidewater of 107,000,000 bushels of corn, Montreal received 6,600,000 bushels, or about 6 per cent. while Montreal's share of 19,035,377 barrels of flour was 1,593,169, or 8 per cent. Of the total receipts of wheat alone at tidewater (65,000,000 bushels), Montreal received 9,500,000, or 14¾ per cent.

BUFFALO'S HOLD ON THE TRADE

Of the 350,000,000 bushels of grain received at tidewater on the North Atlantic less than 250,000,000 bushels were exported, leaving for home consumption at these ports over 100,000,000 bushels, besides interior receipts, which did not reach the Atlantic. For example, Buffalo received 54,000,000 bushels of wheat by lake during the year, and New York, from all points by rail and water, only 28,000,000. Buffalo received over 10,000,000 barrels of flour, and New York only 6,000,000 barrels. This home consumption, independent of the Atlantic shipments that will pass through Buffalo, will always constitute in itself an important trade. While the full development of Canada's natural advantages in transportation must lessen the trade at Buffalo, the congestion of existing routes, the rapid growth of the western grain output, and the local demand of American cities will sustain the commercial importance, even if not the relative importance of the Lake Erie ports.

During the year 1896, Buffalo's grain receipts were 163,400,000 bushels, and of this amount 121,000,000 bushels were forwarded by rail, and 35,000,000 by the Erie canal, a total of 156,000,000. The report describes the splendid elevator accommodation of Buffalo, and its other shipping facilities, its storage capacity of 16,000,000 bushels, and elevating capacity of 6,000,000 bushels in 24 hours.

So far as the relative trade of the Buffalo and the Montreal routes has varied since that report was compiled the gain has been on the United States side. The year under consideration was a banner year for Montreal's grain and flour trade, which first reached 20,000,000 bushels in 1878, and grew to 26,000,000 bushels in 1880. Two years later it fell to 16,000,000 bushels. It was 21,000,000 bushels in 1886, 14,000,000 bushels in 1888, 28,000,000 bushels in 1892, 16,000,000 bushels in 1894, and it expanded to 30,100,809 bushels in 1896. Buffalo's receipts for the same year were 215,000,000 bushels. Of 34,400,000 bushels of Manitoba wheat shipped from Lake Superior in three years, 14,800,000 were exported from New York, and 4,700,000 bushels from Montreal. These records, which are now commercial history, as well as the development of the past three years, show that Canada has really no grain route to the ocean, and that existing transportation interests would be helped rather than injured

by the diverting of traffic to Canadian channels. During the year 1898 the shipments from Montreal by vessels to foreign ports and the Maritime Provinces were 12,000,000 bushels of wheat, including flour, 19,214,299 bushels of corn, 1,648,705 bushels of peas and 6,781,239 bushels of oats. Rye was below the million mark, and flaxseed and barley much lower. Lumber and timber shipments aggregated 323,435,266 feet, board measure.

REVIEW OF PRESENT CONDITIONS

At present the bulk of this grain from Manitoba and the Territories reaches the Atlantic by way of Lake Superior and the Soo canal, thence by Lake Huron, the Detroit and St. Clair rivers, and Lake Erie to Buffalo, where it is transhipped by rail to New York, a small part being carried to that port from Buffalo by the Erie canal. A strong objection to that route is the long haul by rail, which must always be a material addition to the cost. The New York Central has done everything possible to minimize this disadvantage. Gradients have been cut down at great expense, and all the sharp curves have been straightened, this work of preparation for heavy traffic involving great outlays and the mastering of serious engineering problems. This comparatively straight and level roadbed has been equipped with rails weighing one hundred pounds to the yard, far heavier rails than are generally laid on Canadian lines. [One of the chief Canadian grain routes east of the lakes was laid with 56 pound rails.] Proportionate changes have been made in rolling stock. Heavy powerful engines and great trains of cars are run at a speed that taxes the bearing capacity of this superior track, and by such exceptional equipment it is possible to compete with the hampered traffic along the Erie canal.

THE LONG SOUTHERN DETOUR

A weak feature of this route is the long southern detour to New York, and it has another objectionable feature in the long railway haul of 440 miles, with the alternative of a hampered and tedious canal trip. The grain has taken this course in the past going south, and even west of south, some 300 miles out of its natural course, because the St. Lawrence has not been available for vessels of adequate capacity, and the natural railway links have been unnecessarily tortuous, and without the requisite equipment for heavy traffic under modern conditions.

The chief consideration in dealing with this route from a national standpoint is that it is exclusively American. The traffic from Duluth and Chicago to Buffalo is reserved by the coasting laws for vessels of United States register, and it is here that the great fleet of lake carriers is now operating. These vessels of gigantic capacity, some carrying as much as 250,000 and 300,000 bushels, have the right to go to Canadian ports, to Port Arthur and Fort William for cargoes. While the coasting trade is reserved by each nation for its own merchant marine, the vessels of both nations are allowed to ply from a port of one to a port of the other.

While Buffalo is the objective point of the lake traffic all that comes from Chicago and Duluth is United States coasting trade, the traffic from the Canadian ports being free to the vessels of both nations. United States vessels are consequently the more profitable property as they are free to engage in the trade of both nations, and the consequence is that the proportion of Canadian vessels in the trade is inconsiderable.

We will have a Canadian fleet just as soon as there is profitable business for it to undertake, and no sooner. Sentimental considerations may affect the course of trade to a limited extent. but the establishment of a grain carrying fleet of Canadian bottoms is a matter involving great investments of capital and extensive business operations. Men may spend money freely for national or sentimental considerations, but when it comes to the investment of a fortune in a commercial enterprise the matter assumes a different aspect, and is regarded from an entirely different standpoint.

To establish a merchant marine on the lakes we must make profitable business for it, and once that is done the necessary capital will be readily available, for it will come forth not only from Canada, but from Great Britain and the United States.

THE ST. LAWRENCE ROUTE IS ALREADY ATTRACTIVE

The desire of a wealthy capitalist to erect elevators at Montreal is, in this connection, a suggestive circumstance. We have but to open the opportunities and capital and enterprise will be forthcoming. But, while the United States grain trade is reserved for foreign vessels, and Canadian trade is available for the vessels of either country, the United States vessels will be the more profitable investment. We need not expect sentiment to hold against a balance of commercial advantage in great investments of capital.

A small quantity of grain that gets down into Lake Erie in vessels of 14 foot draught comes northward again through the Welland canal into Lake Ontario, and the deepening of the St. Lawrence canals will increase the amount moved by that route to Montreal. When this traffic is from Port Arthur, Fort William or other Canadian ports, it is reserved exclusively for Canadian vessels, and when it originates in United States ports it is open to the vessels of both countries. But it is so small comparatively, as to be of little consequence..

Once the grain of the West, from Canada or the United States, gets down into Lake Erie, its natural course is to reach the seaboard at New York. The splendid equipment of the New York Central minimizes the disadvantage of a long land haul. That course reserves the trade for United States vessels, builds up foreign cities, and puts Canadian farmers, millers, merchants and forwarders at a serious disadvantage. It makes our great and growing West tributary to the eastern mercantile centres of the United States, and builds up foreign cities by side tracking and starving our own.

THE NATURAL CANADIAN ROUTE TO THE OCEAN

A reference to the map shows a natural waterway from the head of Lake Superior intercepted by a narrow neck of land between Georgian Bay and Lake Ontario. The need of a short cut between these waters was recognized as early as 1837, when work was commenced on the Trent Valley Canal. At that time there was no conception of the immense traffic that was destined to come from the prairie lands beyond the lakes, and the chief idea of the promoters was a military highway. The locks then built at Trenton, Chisholm's rapids and Hasting's still form parts of the permanent work of this connecting link. They seem also to have determined the scale of the other permanent works which follow a chain of lakes and rivers between Lake Ontario and Georgian Bay. Several stretches of this chain have been made navigable for very small vessels by the construction of locks and dams. The locks are 134 by 33 feet with a minimum depth of five feet on the mitre sills. This is in marked contrast to the locks on the St. Lawrence route, which are 270 by 45 feet, with a depth of 14 feet on the mitre sills. From Trenton on the Bay of Quinte, a navigable arm of Lake Ontario, there are nine miles of rapids not yet navigable. From the head of these rapids to the Percy landing

there is a navigable stretch of 19½ miles on which is the old lock at Chisholm's rapids. From Percy's landing up to Heeley's Falls the river is not navigable, the shallow stretch being 14½ miles. From Heeley's Falls to the old lock at Hasting's the Trent river is navigable, and that lock rises to the Rice lake level, which, with the Otonabee river is navigable to Peterboro, a distance in all of 51¾ miles.

The lock at Peterboro rises to the level of Little lake, and from that a 9-mile canal to Lakefield is under construction. From Lakefield there are 61 miles of navigable water to the head of Balsam lake. This stretch takes in lakes Katchiwannoe, Clear, Stony, Lovesick, Deer, Buckhorn, Pigeon and Cameron to Lake Balsam, and has one lock at Young's Point, two at Burleigh, one at Lovesick, one at Buckhorn, one at Bobcaygeon, two at Fenelon Falls and one at Rosedale, the latter being 100 by 30 feet, with 4 feet 6 inches of water on the mitre sills. This lock is under the control of the Ontario Government.

The distance from the Bay of Quinte to the head of Balsam lake is 165 miles, of which 132¼ miles are already navigable. From Sturgeon lake the Scugog river is made into a navigable spur 27½ miles long, by the lock at Lindsay. From Balsam lake the proposed route will be by a canal and the River Talbot to Lake Simcoe, and thence by the River Severn to Georgian Bay. The total distance, when completed, will be about 200 miles.

Nature has furnished a long, tortuous and shallow waterway that can be made available for navigation by small vessels. While the cost of making the chain of small lakes and rivers navigable may be comparatively light the deepening of the channels, so as to make them navigable for grain carrying vessels of 14-foot draught would be far too great an undertaking for the Dominion at the present time.

When the time arrives for cutting a deep channel through the neck of land between Georgian Bay and Lake Ontario, a choice of plans must be determined by the surveys and estimates of experts. Whether the natural advantages of the Trent Valley will compensate for its length and tortuous course is a matter that can be determined only by a careful estimate of the dredging, cutting, excavating and construction work on every suggested route. A deputation from Port Hope recently waited on the Ottawa Ministry with a request that the claims of their town be considered as an outlet for the canal. According to published reports it was declared that the change would shorten the distance of the canal to

be constructed by 54 miles, and would lessen the cost by $8,500,000. The southwestern end of Rice Lake is but a short distance from Lake Ontario at Port Hope, but the water has found an outlet by a long detour to the northeast.

HOW TO PORTAGE THIS NECK OF LAND

The channel found by the water in its course to the ocean may not always prove the most advantageous for the construction of a canal, and in fact the arguments of the Port Hope deputation might be extended to support the construction of a still shorter canal from the southern extremity of Georgian Bay to the nearest point on Lake Ontario. Whatever may be the verdict of engineers on these projects it is clear that this course would have the best commercial advantages, for it would touch the commercial metropolis of Ontario, and have excellent commercial territory tributary on both sides. But it is idle to discuss canal routes across this intervening neck of land at the present time. We must face the obvious fact that a canal capable of handling the grain traffic of the west is away beyond the present financial resources of the Dominion. Surveys have been made for a canal from Georgian Bay, at the mouth of the Nottawasaga river, to Lake Ontario, 66 miles direct or 100 miles by way of Lake Simcoe. The locks from Georgian Bay would rise 139 feet to Lake Simcoe, from that lake there would be a fall of 473 feet to Lake Ontario, requiring 39 locks, and at the apex of the ridges a cut 220 feet deep through friable soil that would be apt to press in and fill up the channel, unless the sides were leveled to a considerable distance. This cut is estimated for a depth of 20 feet of water, and would average about 100 feet deep for 10 miles. Estimates for this work have varied, according to the capacity of the proposed canal, from $22,500,000 up to about $50,000,000, but the lower figure is for a canal entirely unequal to the present needs of the traffic.

Whatever may be the advantages of canal construction across this neck of land we must forego them for the present and content ourselves with a railway connection between the two water stretches. It must be a railway constructed and equipped for handling the immense traffic of the West at the minimum of cost for land transportation. The example of the New York Central must be followed wherever experience has shown its wisdom. There must be neither sharp curves nor steep gradients. Rails

must be of sufficient weight, and track of sufficient solidity to bear the heaviest traffic of up-to-date locomotives and cars. And there must be terminal facilities for receiving and discharging the great harvest traffic of the West, and handling the freight business certain to develop on such a connecting link. The New York Central is laid with rails weighing about 100 pounds to the yard, and this standard of construction would have to be maintained in rails, roadbed and bridges. The line would need an equipment of modern locomotives, weighing from 100 to 125 tons, and steel hopper cars, carrying as much as 50 tons. On such a line a train would be able to bring to Lake Ontario, at a speed of 20 to 30 miles an hour, a full cargo for any vessel passing through the 14-foot locks of the St. Lawrence canals to Montreal.

The natural conditions of the isthmus are exceptionally favorable to such a line. The distance is less than 70 miles. From Georgian Bay southward the average gradient of the whole line would be 20 feet to the mile, and this is in the direction of the heavy traffic. From the top of the ridges down to Lake Ontario, the grades are 26 feet to the mile. Thus the natural fall of the land is of as marked advantage as the natural fall of a waterway. This will be a land haul of 70 miles, which is incomparably shorter than that of any existing or projected route. The land haul by the Parry Sound route is 385 miles to Montreal, or 600 miles to Levis, and by the Grand Trunk, with Portland as the point of shipment, it is 682 miles. But the chief competitor will be the New York Central route, which has a land haul of 440 miles.

THIS WILL BE A CANADIAN ROUTE

The first advantage of this route from a national standpoint is the exclusively Canadian haul between Toronto and Montreal by the St. Lawrence route. This being between Canadian ports is reserved by the coasting laws of the Dominion for vessels of Canadian bottom. The waterway has been made navigable to a depth of 14 feet by the expenditure of about $60,000,000, and is now available for vessels carrying 80,000 bushels of wheat. This immense expenditure, which has taxed every line of Canadian enterprise including the carrying trade, has been so far as advantageous to foreign as to Canadian vessel owners. The St. Lawrence canals, though constructed and maintained by the Dominion, are free to the vessels of both countries, and traffic between United States ports

and Montreal is open to vessels of foreign register. Canada's easy generosity in building canals for United States vessels may be illustrated by the record of the Welland.

Take the year 1897 as an illustration. The record of the Department of Railways and Canals shows that during that year of east-bound freight passing through the Welland canal, 338,519 tons was carried by Canadian vessels, and 687,939 tons by United States vessels. Of west-bound freight Canadian vessels carried only 7.458 tons, and United States vessels 210,834 tons, or a total of 345,977 tons for Canadian vessels, and 898,773 tons for United States vessels. It seems apparent that under present circumstances the Government is only justified in maintaining the Welland canal at its present efficiency, and that it would be a grave mistake to expend more money with a view to enlarging and improving its capacity. The benefits of such improvement would fall to United States shipping interests to the injury of our Canadian marine. Experience has shown that such results have followed the improvement of the Welland canal in the past. Under the improved conditions the balance of advantage from every enlargement in the capacity of the Welland canal would be still more in favor of the United States. The record of the St. Lawrence canals shows a balance in favor of Canadian vessels. but more than a third of the traffic is way freight. Canada will not derive adequate benefit from the great outlays on this part of her inland navigation until the bulk of the traffic is reserved for vessels of Canadian register. The diverting of traffic will put Oswego, Rochester and other points on the southern shore of Lake Ontario in closer touch with the Northwest, while Montreal and Quebec will participate in the trade of a great fleet of United States vessels of 14-foot draught. Once the portage link is completed lines of barges for carrying freight cars from Toronto to Oswego, Rochester, Ogdensburg and other points will become a necessity. This will give Ontario and the west many railway outlets in addition to the splendid natural waterway by the St. Lawrence.

It is not necessary to modify existing treaties or laws. Our coasting trade is now reserved for our own vessels, and when the bulk of the St. Lawrence carrying trade is from Toronto to Montreal and Quebec the demand for Canadian vessels will soon bring forth an adequate fleet. We will have a Canadian merchant marine on the lakes just as soon as there is profitable business for our vessels and no sooner. At present there are only some half dozen first-

class Canadian vessels available for the St. Lawrence route, while the United States carriers have about 400 vessels prepared to enter into this trade. With the influence of Toronto, Montreal and Quebec in favor of this project and its great benefits made clear to the rest of the Dominion it can be easily and expeditiously accomplished.

THE CHANGE WILL NOT BE INSTANTANEOUS

A fleet of vessels is not an instantaneous creation, neither is a new route immediately substituted for an established line of transportation. But this whole lake traffic in wheat, even including the development of the western wheat areas, is a thing of yesterday. Vessel transportation is elastic. Capital is quick to see an opening for profitable activity. The growth of the Northwest is but begun. And the opening and rapid development of a new route need not mean the complete starvation or abandonment of the old. Present facilities are lamentably inadequate. A year ago at the port of Buffalo alone 263,000,000 bushels of wheat arrived, and after forwarding by canal and railway to their utmost carrying power, and filling all the elevators, some vessels had to lie all winter without being unloaded. We were recently obliged to abrogate the coasting laws in regard to the traffic between Fort William and Parry Sound, and open it to United States vessels, that a serious grain blockade at the former port might be averted.

The wheat comes on with a rush from harvest to the close of navigation, and to handle it we must have an adequate fleet, which will be built as soon as capital is assured of fair returns from investments. With the development of trade along this route will come the vessels to handle it, and they will be owned by companies specially interested in making the St. Lawrence the grain route to the Atlantic.

At present the few Canadian vessels on the lakes find the grain of the West seeking an outlet by congested routes at a time when their coasting trade is most active. It is the vessel owners' harvest, and they take full advantage of it. The grain trade is a fortunate accident that is improved and exploited to the fullest extent. This condition of affairs has tended further to divert trade to United States channels since the system of time contracts has become prominent in the grain business.

The time contract is a modern innovation, and is finely developed on the other side of the line. It is the competitive field into which the Canadian transportation companies must enter. Absolute certainty is essential, and inadequate facilities are fatal to any route. The St. Lawrence route, once the neck of land between Georgian Bay and Lake Ontario is properly portaged, will receive all the grain that its vessels can handle with promptness and certainty. The deepening of the St. Lawrence canals has already promoted the construction of vessels of Canadian bottom, and once the possibility of a grain route by these canals is assured, Canadian capital and enterprise will furnish the fleet and operate it to the general advantage of the Dominion.

THE DEVELOPMENT OF CANADIAN CITIES

A favorable feature of this route will be the prospect of return cargoes for vessels engaged in the grain trade, and the large amount of traffic available during the whole season of navigation. The American vessels now have the advantage of returning to Duluth and Chicago with general merchandise from the manufacturing and importing points of the east, and Canadian vessels on the St. Lawrence route would have a similar opportunity for return traffic. The St. Lawrence would connect, by a water service of great capacity, Canada's trading centres, Toronto, Montreal, Quebec and many smaller cities and towns from Lake Ontario and the St. Lawrence rivers to the farthest ports in the Maritime Provinces.

The Ontario capital is the distributing point for the province, and the forwarding point for the West. The general merchandise discharged by the ocean liners at Montreal will naturally find its way to the consumers by the same route that the grain of the West follows in reaching the seaboard. The large area tributary to Toronto would be immeasurably benefited by the cheap freight service that would be established on the St. Lawrence by the returning grain vessels. Toronto is the distributing point for all this rich, cultivated area, with its many populous centres, as well as for the new and growing territory to the northward. Every important line of goods, whether of foreign or domestic manufacture, will be cheapened by this new freight service, and many new industries will be called into existence.

Ship building will not be the only industry awakened into life by the diverting of Canadian trade to Canadian channels, although

for a time it may be chief among our new activities. The shipyards themselves will require many attendant industries of considerable importance, and with cheaper transportation many enterprises now commercially impossible will find abundant scope.

The question of return traffic, and general traffic during the earlier part of the season, impresses the need of considering the commercial as well as the physical geography of the country in seeking the most advantageous transportation line. And it is an exceptionally fortunate circumstance that the best geographical route yet available is also the best commercial route, connecting, as it does, the great commercial centres of the Dominion. While a short cut available for grain alone with the return of empties might be advantageous for rail traffic the full advantages of water transportation are best secured by tapping the centres of distribution. and following, where practicable, established lines of trade.

THE CHEAP HAUL OF RETURN FREIGHT

The commerce of the great area served by Toronto would afford a large volume of business for the returning grain vessels, and the competition among them to secure it would be an additional advantage. In the early season before the harvest rush there would also be a fair share of traffic for these vessels, and the more general choice of Montreal as a port of entry by Atlantic freight vessels would turn over to our St. Lawrence fleet much of the business now handled by American vessels on the lakes. Canadian centres of population, including points as far east as the Maritime Provinces, as well as Quebec, Montreal and Toronto, would become interested in a common aim to build up a Canadian lake marine, and create an inter-provincial marine trade. The manufactured products of our eastern cities would furnish important return cargoes, and the cheaper transportation rates would give them easier access to Manitoba and the Territories. The coal of the Maritime Provinces, which can at present only reach the port of Montreal, would find through the reduction of freight charges, a market in Ontario cities, and new markets would be made available for the iron and other products of eastern Ontario.

When the Soulanges canal, the last part of the St. Lawrence system to be deepened to 14 feet, was completed, the attention of the leading cities on the American side of the lakes was called to the new conditions of lake traffic. The Chicago Record, a good

authority on lake transportation, said that the new work would reduce the cost of the St. Lawrence transportation beyond the possibility of profitable competition by any other existing route. It was seen that a great reduction had been effected in the cost of transporting wheat to tide-water, and also in the cost of carrying all products designed for transatlantic ports from the large territory tributary to the lakes. It is generally acknowledged by shippers that the Liverpool quotations determine the price of wheat at every point, and that every cent saved in the cost of delivering it at Liverpool means that much more to be paid to the producer of the wheat at the time it is sold and shipped. A decided advantage of the St. Lawrence route is that it is more northerly, and consequently cooler. The danger of heating and sprouting by the southern routes is too familiar to all grain shippers.

COST OF CARRIAGE BY EXISTING ROUTES

It is asserted on excellent authority that the rates to New York by the Erie canal on account of its limited capacity and tortuous length, cannot possibly be reduced to a figure that can compete with the route to Montreal by the Welland and St. Lawrence canals, were that route established and equipped with a vessel service. The advantages will be vastly greater when the short cut is established avoiding the long detour to Lake Erie. The deepening of the St. Lawrence canals has been of itself sufficient to attract capital to the development of the St. Lawrence route. The plans of the Conners' Syndicate contemplated the use of the circuitous Lake Erie route, and the erection of gigantic elevators at Port Colborne, Montreal and Quebec. A part of this enterprise was the construction of a fleet of steel vessels to transport grain from the upper lakes to the Gulf ports. This was entirely a private enterprise, and had in contemplation extensive investments of capital. The elevators were to be of steel, some with a capacity of 3,000,000 bushels, and the outlay on this feature of the scheme alone was estimated at $4,500,000. A fleet of twelve grain carriers was to be ready by the fall of 1901, so that they might take part in that season's operations. Each vessel was to be 250 feet long by 43 feet beam.

Preparations were made for the construction of some of these vessels at Toronto, at Collingwood and at Three Rivers. The desire of the syndicate to prepare immediately for a large volume

of trade would have necessitated the building of some of the vessels on the Clyde. While it was estimated that a dozen steamers would be sufficient to meet the traffic that could be developed on this route for several years, it is safe to assume that with an adequate link of railway across the isthmus between Georgian Bay and Lake Ontario, the growth of the St. Lawrence traffic would be much more rapid. A large Canadian fleet would soon be needed and another important opening would be afforded for Canadian capital and industry.

The Conners' Syndicate, composed of astute and enterprising business men willing to sustain their opinions on lake traffic with the investment of their capital, regarded the St. Lawrence route around by way of Lake Erie as preferable to the existing route by Buffalo. The deepening of the St. Lawrence canals was regarded as the opening of a new opportunity, and the Syndicate was prepared to take full advantage of it. The lack of elevator accommodation was a difficulty the promoters were prepared to meet. They have already contracted for the erection of great elevators at Montreal, and there is no doubt as to the certainty of abundant trade for them.

THERE IS FULL SCOPE FOR PRIVATE ENTERPRISE

The proposed fleet of 14-foot vessels was intended for service between Port Colborne and Montreal. If this trip were shortened by a portage railway between Georgian Bay and Lake Ontario it would save the slow passage of the Welland canal, 26¾ miles in length, with two pairs of guard gates, one guard lock and 25 lift locks with a total lockage fall of 326¾ feet. This with a slight shortening of the sail on Lake Ontario, would make a material difference in the cost of hauling, and enable every vessel to make almost double the number of trips in a season. The actual lockage would be reduced more than half each way, for there are but 23 locks on the St. Lawrence canal between Montreal and Lake Ontario, and 25 on the Welland canal. The length of actual canal on the St. Lawrence and Lake Ontario route is 46 3-8 miles, and to this the Welland would add 26¾ miles, the saving of canal navigation by a portage railway being a saving of over 36 per cent. Of the open sailing in the St. Lawrence and Lake Ontario, some 300 miles, there would be comparatively little reduction of distance. But the chief saving would be effected in the tedious part of the trip, the lockage and canal navigation. An approximate estimate may be made of the saving by a connection with the portage railway.

MONTREAL TO TORONTO.

	Hours.
Open water 300 miles, 10 miles per hour	30
Canals 46⅓ miles, 2.9 miles per hour.....	16
Lockage 206 feet, 1½ minutes per foot	5⅝
	51⅝

This would mean for the return trip 102 3-10 hours.

MONTREAL TO PORT COLBORNE.

	Hours.
Open water 300 miles, 10 miles per hour	30
Canals 73¼ miles, 2.9 miles per hour	25¼
Lockage 532¾ feet, 1½ minutes per foot	13⅓
	68 7/12

This would require for the round trip 137 1-6 hours.

From this it is clear that a vessel capable of making 10 miles an hour on the open river and the lake can make four trips to connect with the portage railway in the time that would be required to make three trips to Port Colborne. By the proposed method of tugs with consorts, fully 24 hours would be required to pass through the Welland canal, thus increasing the advantages of the shorter route. The great advantage of this needs no argument, especially in view of the hurry attending the marketing of every season's crop, and investors in Canadian transportation enterprises should fully consider it before making extensive investments in elevators and docks on Lake Erie.

Every line of transportation established is an influence against the development of new routes. There is the same opening for merchant marine enterprise on the St. Lawrence and on the upper lakes, and no doubt many who were prepared to enter with Mr. Conners in his transportation project will invest in grain carrying vessels on both stretches of the short route once the missing link is supplied by a railway of adequate capacity.

COASTING TRADE FOR OUR OWN VESSELS

The link between Toronto and Montreal will be reserved exclusively for Canadian vessels by the existing coasting laws, just as the traffic to Buffalo from United States ports on the upper lakes is now reserved for vessels of United States register. On the upper lakes, where vessels of 250,000 bushels and 300,000 bushels capacity, are employed, the Canadian route will reverse the conditions which have tended to crowd vessels of Dominion register off the

lakes. Buffalo being now the chief port of destination traffic from American ports is reserved for United States vessels, while that from Canadian ports is open to vessels of both countries. Once the southern extremity of Georgian Bay becomes the objective point the entire lake traffic will be open to Canadian vessels, and other vessels will be prevented from competing except for such business as comes from United States ports.

Canadian vessels will be free to handle the trade out of Chicago, Duluth, Milwaukee, Bay City and other American ports in competition with vessels of United States register, while the trade from Fort William and Port Arthur will be reserved exclusively for Canadian bottoms. This route would make an opening for profitable investment in Canadian vessels of large capacity, for modern invention has put the vessels of a decade ago entirely out of the race. There is no commerce in the world carried as economically as that of the Great Lakes in gigantic liners of modern construction. By the adoption of triple expansion engines, with water tube boilers supplying steam at a pressure of from 180 to 240 pounds to the square inch, the consumption of coal per horse-power has been reduced to about 1½ pounds per hour. The Marine Record has published the plans of four vessels recently designed for this traffic, and capable of carrying 300,000 bushels of wheat each. They are 500 feet long, 52 feet beam and 30 feet deep, and fitted with every device for saving labor.

What will be the limit in this line of vessel construction it would be idle to predict. When the 300-foot lake vessel appeared it was regarded as marking the limit in size for practical or profitable lake transportation. The same was thought of the 360 foot vessel, and shortly afterwards of the 400 foot vessel. But the advance was rapid to 450 feet, and now we have the 500 foot vessel regarded in its turn as marking the limit in size. Engineering science has made the huge steel freighter the most efficient means of transportation. But the larger the modern grain carrier grows the more will the field of its operations be limited. It must adhere to deep channels and certain routes. As vessels increase in size the greater will be the advantage of a straight, certain and clear passage to the southern extremity of Georgian Bay over the shallow, circuitous and obstructed channels of the Detroit and St. Clair rivers.

Every trip counts for so much that open seaway, deep water and a short passage are immense advantages for any route. A

vessel representing an enormous investment of capital cannot afford to waste time in the shallows and crowded straits of the river-passage to Lake Erie. Its field of operations must be further limited by the circumstance that but few harbors have sufficient depth of water or docks of sufficient height to accommodate the largest class of lake vessels. Even Chicago harbor cannot accommodate the latest additions to the grain carrying fleet.

The size and cost of these lake carriers tend in other ways to restrict them to certain courses. They must keep to the shortest routes on the through line of traffic, as on these the time of the light return will be reduced to a minimum. The time during which they are not earning must be brought to the narrowest possible limit. Such craft now pursue the circuitous route to Buffalo, but their return trip light is a tedious and costly necessity. They cannot always depend on getting a return cargo at Buffalo or Cleveland.

THE BEST ROUTE FOR THE GREAT GRAIN CARRIERS

On a route ending in Georgian Bay these carriers would be operated to the best financial advantage. With adequate railway facilities for forwarding the grain, as there is at Buffalo, the ports of Georgian Bay would soon become the great transhipping points of western grain traffic. The landing place would be changed from Lake Erie to Georgian Bay, and Lake Ontario would become alive with traffic as Lake Erie is at present. Canadian vessels would be built in response to a new demand and the many industries dependent on transportation would receive a new impetus. To make Canada the highway of the grain trade it must be kept out of Lake Erie, and that can be accomplished only by the construction of a railway that will serve the Georgian Bay ports as Buffalo is served by the New York Central. Grain and other traffic will reach the ocean by the cheapest and quickest route, just as water seeks its level by the easiest channel. The need of the present day is, not a dam or obstruction on any existing route, but the opening of a new one that will be shorter, quicker, cheaper and of special advantage to the Dominion.

The distance from Fort William or Chicago to Port Colborne or Buffalo is about 900 miles, while the distance from these ports of shipment to the southern extremity of Georgian Bay is 550

miles, a saving of 350 miles on the sail of the gigantic freight carriers. Taking into account the crowded and hazardous river passage between lakes Huron and Erie this reduction cuts almost in half the time requisite for a gigantic liner on the upper lakes to make the trip from Fort William or Chicago. That would be an advantage so great that with an adequate portage railway in operation the bulk of the grain destined for the Atlantic seaboard would not find its way down into Lake Erie.

The cost of handling the grain at the Lake Ontario terminus of the portage line would be minimized by the use of improved hopper cars, which could be discharged from trestles directly into the vessels or into elevators. By the circuitous route of the Welland canal there is but one handling at Port Colborne, but the saving of a second handling of the grain cannot compare with the saving in time and mileage afforded by the Georgian Bay route. The saving in time alone amounts to more than two days each way, or about five days for the round trip. Under present conditions, when time contracts are necessary to successful competition for grain transportation, this saving will more than counteract the disadvantages which have sent the grain to Buffalo instead of by the St. Lawrence route. The trip of the great liners on the upper lakes would be cut in half. As far as the actual sail is concerned, and without reference to receiving and discharging cargoes, a vessel from Port Arthur, Fort William or Duluth would make almost two trips to Georgian Bay while making one to Port Colborne by the Detroit and St Clair rivers. That would mean almost the doubling of their carrying capacity during the navigation season. The time of the St. Lawrence trip for vessels of 14-foot draught would be reduced about 25 per cent.

THE PORTAGE RAILWAY LINK

It may be well to enter upon a consideration of the portage railway with the bold acknowledgment that the cost of transportation by rail is far greater than by water. The New York Central railway has made what may be called an heroic attempt to compete with the traffic of the Erie canal, but its superior equipment and the natural and legal disabilities of the tortuous waterway have served rather to emphasize than overcome the many advantages of water transportation. The railway has been improved and per-

fected in every department. Less than a quarter of a century ago, upon the average railroad the capacity of a freight car was 20,000 pounds, and the capacity of a freight engine was from 20 to 30 such cars to the train. Now the New York Central on its line parallel to the Erie canal has grain cars carrying 1,000 bushels, or three full loads for a car of 25 years ago. One of the modern type of locomotives will haul 75 such cars as an ordinary train load. The same engine will haul from 110 to 125 empty cars. It is not an unusual thing for one of these monster engines to haul through the Mohawk valley, alongside of and in competition with the Erie canal, 85,000 to 90,000 bushels in a single train. This would be a load for ten or twelve trains in the seventies.

In the busy season there are sometimes from 75 to 100 such trains passing over the tracks of the New York Central alone in a day. The line has spent great sums in reducing its gradients, straightening its curves, perfecting its roadbed and laying heavy rails to endure the strain of this traffic, and it has paralleled the Erie canal with no less than six tracks. For the calendar year 1899 that portion which parallels the canal carried a total of 20,308,000 tons of freight. Of this tonnage, grain constituted 3,445,000 and flour 785,000 tons, or a total of 4,230,000, about 21 per cent. of the whole. This shows that while it will be advisable to perfect both track and equipment on the portage railway between Georgian Bay and Lake Ontario according to the example set by the New York Central, even the diverting of as large a grain traffic as now passes by that line from Buffalo to New York, will not require the multitude of tracks that parallel the Erie canal.

CONTEST BETWEEN RAILWAY AND CANAL TRAFFIC

The New York Central and other railways of the Empire State, with all the eager enterprise of great corporations, enlarged their capacity, improved their equipment and entered into numerous combinations and agreements with other interests to secure the new traffic that grew up in the West. Canal traffic is always a private and competitive enterprise, never subject to corporate control. But the enlargement of canal capacity is a public affair likely to encounter the active opposition of the railway interests.

Notwithstanding many serious obstructions to canal traffic the Erie is still the regulator of freight rates between Buffalo and

New York, and shippers and consumers must not estimate its value by the tonnage it actually carries. The fact that it is there, that new vessels will appear if the railways advance their rates and make the trade more profitable, that there is always a competitive route available, prevents the eternal bickerings that arise elsewhere between railway corporations and their patrons.

The same effect must follow the development of the grain route by the St. Lawrence canals in accordance with their enlarged capacity of 14 feet. This route, it must be borne in mind, will not compete with the Canadian railways in the sense of depriving them of trade they are now handling. Speaking broadly, the grain trade of the lakes is in the hands of the Americans, and so far as the Canadian route grows faster than the development of Western trade it will be at the expense of United States competitors.

CANAL TRAFFIC IS ALWAYS COMPETITIVE

While competitive railways have always proved illusory, and have resulted finally in combinations, with the greatly augmented cost of dual management, the canal has invariably remained a public highway open to free competition. The active development of the St. Lawrence route will be the best possible regulator of railway rates along this most fully developed part of the Dominion. The traffic on the New York canals shows that their development has been quite in accordance with the demands of the States commerce and transportation up to 1872, when the expansion of the western grain area began in earnest. The traffic then created was taken up by the railways, but with all their enterprise and the stimulus of private interests they have been unable adequately to meet the demands on them.

The need of a new route is pressing, and it must be a Canadian route. At great cost we have prepared such a route with the exception of the short link between Georgian Bay and Lake Ontario, and whatever the growing needs of the future may bring forth the only method of connection now available is by a portage railway. This railway must be a link in the canal system, an open highway for the shipment of merchandise. The Government has completed the water stretches of the canal system at great cost, and there can be no objection to the building of this comparatively inexpensive link to make the other parts available and serviceable to the Dominion. The fact that it is named a "railway" should not

act as a deterrent, as it will be merely a connecting link in the canal system already built. There is no reason why it should not be operated on the same financial basis as the canals. The earlier design of the steam railway was an open highway available for all shippers desirous of running cars over its rails. As the roads and terminal facilities were in tne hands of private corporations they were abie to crowd out other shippers operating rolling stock. If the Government provided a road and proper terminal facilities private enterprise would soon supply the rolling stock, just as it has produced the vessels as fast as the canals have been built and the traffic has appeared. Monopolistic control would be no more possible on such a link of railway than on any other part of the canal system. Vessel owners would no doubt be first to enter the field, and it is probable that the companies operating lines of steamships would do the bulk of the hauling over the portage. But with the railway and its elevators and other terminal facilities free to all comers there would be no danger of exorbitant or obstructive rates. Barges on Lake Ontario capable of carrying great loads of freight cars would perpetually expose the operators of rolling stock to competition from other carriers. The project would not commit the Government to a policy of railway building, but would merely be the carrying out and perfecting of a canal policy already adopted, at the minimum of expense. Nor would the Dominion be committed to a policy of Government elevators. The departure in that direction has already been made at St. John, but the proposed terminal works would be merely a safeguard against possible difficulties under private control. This highway must be as free in every part as the canals. It must not be exposed to the danger of sudden obstruction through conflicts regarding rates, or other contingencies. The Government should do everything that is necessary to make a free competitive highway absolutely certain and nothing more.

ONLY ONE LINK WANTING

The fact must be emphasized that the Canadian route is now completed with the exception of this one link. The cost will be incomparably less than would be required in the initial stages of any other Canadian route. In creating a Canadian grain route it does not compete with any existing Canadian transportation enterprise. When so much can be accomplished with an expenditure compara-

tively so light, it is clearly the duty of the Government to move in the matter. A better time could not be chosen than the present, for the existing routes are inadequate, the expenditure would be scarcely felt, and there is no competitor to be injuriously affected or prejudiced against the scheme.

A grain route to the Atlantic is within easy reach of the Canadian people, for nothing remains to be done but to complete the canal system now established by a portage railway. If the cost of Government elevators be added to the cost of the railway and equipment, the outlay both for interest and sinking fund will be more than covered by the saving on the cost of hauling our western harvests alone, without taking into account the immense commercial advantages to be derived indirectly from the turning of traffic to Canadian channels.

VALUE OF THE LAKE TRAFFIC

The importance of this great international waterway was brought prominently before the people of Canada and the United States by the reports of the deep waterways commissions appointed for joint conference by the United States Congress and the Dominion Parliament in 1895. In these reports the changing condition of the world's commerce, and the pressing needs of a new situation were forcibly set forth. The United States Commission dealt at length with the new competitive factors introduced in the European markets by the opening of the Suez canal. That occurred in 1869, and it brought the east into competition with western civilization by reducing a voyage of six or eight months to 30 days. The change virtually destroyed the value of the sailing vessels formerly employed, and made it necessary to readjust the old methods and ancient systems of distribution to an entirely new situation.

One result of this rearrangement of the ocean route was a reduction of the freight rates on grain by about 75 per cent., which enabled India to enter the markets of Europe with grain, which averaged about 30,000,000 bushels annually, from 1881 to 1885.

This competition of the east has recently been intensified by the entrance of some of the South American states into the world's markets. These new competitors impose on us more clearly the necessity of providing every possible means by which our agricul-

tural interests may compete on favorable terms. The cost of internal transportation is an important factor in a country of such immense distances.

The United States commission dwelt at great length on the importance of the lake transportation, and although its conclusions were weighted with the necessity of favoring southern exits on the Atlantic, its views as to the importance of the internal waterways are of considerable value. The increase of traffic by the United States and Canadian canals at Sault Ste. Marie is the most striking feature of the change in lake transportation. In 1885 the record was 5,380 vessels with an aggregate tonnage of 1,035,937, and carrying 3,256,628 net tons of freight. The growth is shown by the following table:

Year	No. of Vessels	Tonnage	Net tons Freight
1886	7,424	4,219,397	4,527,759
1887	9,355	4,897,598	5,494,649
1888	7,803	5,130,659	6,411,433
1889	9,576	7,221,935	7,516,022
1890	10,557	8,454,435	9,041,213
1891	10,191	8,400,685	8,888,759
1892	12,580	10,647,203	11,214,333
1893	12,008	8,949,754	10,796,572
1894	14,491	13,110,366	13,196,860
1895	17,956	16,806,781	15,062,580
1896	18,615	17,249,418	16,239,061
1897	17,080	17,621,318	18,986,689
1898	17,761	18,622,754	21,234,644
1899	20,255	21,958,347	25,255,810

In 1894 the St. Mary's canal was open for 234 days, about 10 days more than the average. The Suez canal, which is open all the year, passed 3,325 ships with a tonnage of 8,039,105 or 5,071,261 less than the tonnage passing through the canal connecting Lake Superior with the lower lakes. The amount of freight passed by this canal during the open season was equal, in that year, to 13.6 per cent. of all the freight carried by all the railways of the United States for the entire year. In 1889 the late Mr. George H. Ely made an estimate of the traffic passing through the Detroit river, and great care was exercised in the collection of his figures. He found that the traffic of the river was three times as great as the foreign trade of New York, that it exceeded the aggregate foreign trade of all the seaports of the United States by 10,000,000 tons, and was 3,000 tons more than the foreign and coastwise trade of London and Liverpool combined. This shows that a large part of the existing traffic of the river is destined for local and not for

foreign points. Such trade would continue its present courses in spite of the improved facilities of the St. Lawrence route. It should be sufficient to reassure our neighbors and their newspapers now showing so much anxiety about the effect of the improved St. Lawrence canals on lake navigation.

It is the grain trade destined for the European market, the export trade in other products originating in the great area commercially tributary to the lakes, as well as the return cargoes of imported goods and the manufactured products of eastern cities, that will be handled by the new Canadian route. The Dominion will simply provide a means by which a long detour of some 300 miles each way, on fresh water, may be avoided, and the distance between the upper lake ports and Liverpool made from 700 to 800 miles shorter than by the New York route.

TRADE THAT PASSES OUR DOOR

At a meeting of the Lake Carriers' Association, held in Detroit in 1896, the statement was made that the ton mileage of vessels passing through the Detroit river during the previous year was 22,395,251,250. The cost per ton per mile was .85 of a mill, and the net tons of freight actually carried was stated to be 29,860,335. The effect of this great trade on the increase of manufacturing may be estimated by the growth of Cleveland, Ohio. That city, located near the lower end of the deep water navigation from Duluth to Buffalo had a population of 80,000 in 1876. It was not expected that there would be any marked development of business there, but the deepening of the connecting channels has created a trade in ore and coal, which has carried the population up to 350,000. The shipyards of the city maintain a great force of employees.

There is no reason why Canadian ports on the St. Lawrence route should not enjoy the same stimulating influence, for water transportation brings many industries in its train, while supplying at the minimum of transportation cost all the material needed for industrial development. The trade at present developed in Lake Erie gives some intimation of the commercial value of the leading waterway of the Great Lakes. There is no fresh water or salt water lake in the world, the commerce of which can compare with that of Lake Erie, in spite of the almost total suspension of its trade for three months each year. It receives all the water-borne agricultural produce

from Lakes Huron, Michigan and Superior, and also all the return cargoes from the east. It possesses an enormous inland tonnage distributed along its shores in the transfer of ore and coal, with important iron and steel industries arising from the junction of these products. Along the southern shore are about a dozen cities within 300 miles, the receiving ports for ore and the shipping ports for coal as well as agricultural exports.

The cities of Lake Erie have four shipyards, and their registered tonnage is nearly half that of the five great lakes. If Detroit be regarded as belonging to Lake Erie it raises her proportion of the registered shipping to 60 per cent.

TRADE OF HALF A CONTINENT

The immense territory commercially tributary to the lakes both in Canada and the United States, as shown in the accompanying map, accounts for the great trade of Lake Erie and the commercial and industrial development attending it. The producing area of Canada and the United States lies behind and around the Great Lakes, and is commercially tributary to them as the natural highway to the ocean. There is no reason why the Georgian Bay and Lake Ontario route should not enjoy a large amount of this coastwise traffic, ultimately the bulk of it, and the commercial and industrial advantages that follow in its train. By the contour of the international waterway a long triangle of Canadian territory, the garden of Ontario, projects southward into the territory of the adjacent republic. The portage railway will bring the coastwise traffic by a short cut across this southern extension, and through the most populous districts of the Dominion, instead of by a long detour to American Atlantic ports.

The advantages of Montreal and Quebec as ocean ports are already recognized, the latter being about 500 miles nearer to Liverpool than is New York. From a Canadian standpoint the low rates that will be quoted for return cargoes from Europe will be a special advantage, materially cheapening many important lines of merchandise and bringing a great volume of forwarding business to the Canadian cities that is now diverted to the United States.

THE MARITIME PROVINCES ARE SIDE-TRACKED

The development of the St. Lawrence and Gulf traffic will bring the Maritime Provinces in closer touch commercially with Ontario and the Canadian west. The new development that is taking place in the rich mineral deposits of Cape Breton and Newfoundland will create a large volume of trade, which will be drawn to Montreal, Toronto and other Canadian centres by the growth of traffic on the St. Lawrence route. While Toronto has been side-tracked by certain interior routes to Gulf ports the whole Maritime section of eastern Canada has been side-tracked by the diverting of ocean traffic southward to United States ports. This has been a serious loss to the Maritime Provinces, which will be made good by the development of the St. Lawrence route.

The public mind in the east is not thoroughly disabused of the idea that the Great Lakes in some way conform to the western extension of this continent. In reality they are east of the grain producing areas, and afford a waterway for the commerce of more than half the continent both to and from the Atlantic. In estimating the value of this commerce it is fair to cite the effect of shipping on the leading British seaports.

Maritime commerce is the life of Britain's most prosperous cities, and is in fact the mainstay of the nation. But without crossing the Atlantic for an illustration we can see what the inland water traffic has done for the United States cities on the lakes. Chicago, Milwaukee, Detroit, Buffalo, Cleveland and other cities owe their growth in a large measure to the shipping of these inland waters, for the centering of railways as well as of manufacturing industries is dependent on the water traffic. It is impossible to over-estimate the commercial value of this traffic, for it concentrates the shipping of half a continent, thereby creating many attendant lines of trade and industry, while it brings all lines of raw material within easy reach.

The slow development of the Maritime Provinces has puzzled many Canadian statesmen and publicists. Rich deposits of iron and coal have been practically undeveloped. Districts known to be rich in minerals have remained unexplored. Seaports which should have expanded with growing trade from the forests, mines and farming areas of the interior have remained stationary or dwindled in population. Railway communication from which so much was

expected has proved more or less disappointing in its results. Natural resources of inestimable value have lain idle, while on the more direct lines of Maritime commerce, development has been phenomenal. The explanation is found only in the commercial side-tracking of the Maritime Provinces by the diverting of trade to Lake Erie and the American ports. With ocean vessels leaving Montreal and Quebec carrying the grain, iron, lumber and other surplus products of the Canadian and the American west, bringing return cargoes for all distributing centres and carrying the products of Maritime Provinces across the ocean or to the interior ports, the way-station lethargy that has afflicted the Provinces by the sea will soon disappear. All the world's products will be brought within easy reach, and there will be cheap transportation to Canadian and foreign markets.

OTHER ROUTES TO TIDE WATER

Comparisons with the existing route by Lake Erie and the Welland canal are decidedly in favor of the portage railway route. If the deepening of these Canadian waterways to 18 or 20 feet was a possibility of the immediate future, the Lake Erie route might have a fair chance in the competition for traffic. Even with its long detour it might be able to secure a considerable amount of business. But the St. Lawrence and Welland canals must be regarded as completed for the present. The next enlargement will involve a greater expense than has yet been contemplated at any time, for it will require a series of works extending to every lock and cutting on the waterway. It is a work that must be relegated to the future when a populous western Dominion will bring new demands and new means of meeting them. In that day the grain carriers of the upper lakes may be locked down to Lake Ontario from Georgian Bay instead of delivering their cargoes to a portage railway.

Another alternative route that has been strongly advocated is known as the Montreal, Ottawa and Georgian Bay ship canal, and is projected to follow the Ottawa river and Lake Nipissing chain to Georgian Bay. The chief claim of its promoters is that it would afford an uninterrupted waterway. That would be an advantage, even though the most ambitious plans yet devised have been for vessels of ten and twelve feet draught, to receive the cargoes of the upper lake vessels in Georgian Bay. It is also urged that the Ottawa river route would be shorter by some 300 or 400 miles

than the Welland canal and St. Lawrence route. Very favorable estimates have also been made as to the possibilities of developing the water power of this chain of lakes and rivers. But without questioning the wisdom of diverting traffic away from distributing centres and populous districts a consideration of the cost of the proposed canal removes it from the list of transportation routes at present within reach.

COST OF A CANAL

The most favorable estimates published by the promoters place the cost at from $16,000,000 to $19,000,000. In a recent debate in the House of Commons a Member of extensive experience in shipping and contracting estimated the cost of this proposed canal at $100,000,000. The Hudson's Bay route, the shortest of all, has also been considered, but nature has decreed against it.

One need not be unduly imaginative nor unreasonably optimistic, to see in the future the ample development of all available Canadian routes, for the harvests of the west already exceed all existing transportation facilities. The duty of the present hour is to make the best use of the means at our command, to use as far as possible the canal system already constructed, and complete such links as are immediately needed to make the natural Canadian route operate. We must secure for Canada the many advantages of an inland merchant marine and rid ourselves of the reproach that the harvests of Manitoba and the Territories are now transported to Britain by foreign labor and foreign capital.

TORONTO IS SIDE-TRACKED

The leading mercantile and manufacturing interests of Toronto have been slow to realize the importance of the transportation problem and of the advantage of their position on the nearest lower-lake point to Georgian Bay. The provincial railway system which has spread out from the city like a fan has brought a liberal measure of prosperity, and the city and its trade have expanded proportionately. But the advantages which come to the city as a local railway centre should be accepted, not as the measure of our growth and expansion, but as an intimation of the vastly greater benefits to come from a place on the national and international

highway of the lakes. If a more direct proof were needed of the local value of this commercial highway it is to be found in the growth of Buffalo, Cleveland and other cities on Lake Erie, where the trade of this natural highway to the heart of the continent is now centred.

The trade of half a continent has been diverted away from Toronto and away from Lake Ontario, partly by the railway enterprise of our neighbors and partly by our own dereliction. Fortunately the means of making amends is easily within our reach. The St. Lawrence canals have been deepened to 14 feet, so the obstacles have been removed from that part of the route. It only remains to build about 70 miles of a portage railway to connect with the gigantic liners of the upper lakes, and the city will be on the direct and the cheapest highway from Chicago, Duluth, Port Arthur, Fort William and other upper lake ports to the Atlantic.

If the business men of Toronto fully realized the importance of this commercial highway they would work with a will and never desist till the scheme was carried to a successful issue.

COMMERCE OF THE GREAT LAKES

It is not merely a question of the handling of grain, the erection of elevators, the building and equipping of ships that is involved in this project. While shipyards, elevators, docks and other attendant industries would be of themselves material additions to Toronto's useful enterprises, the most important advantage within reach of the city is the establishment, on Lake Ontario, of the trade that has made Lake Erie famous, and built up so many thriving cities on her shores. The great barge with its load of railway cars is a familiar sight on Lake Erie, and with the portage link completed it would soon be as familiar on Lake Ontario. It would put Toronto in direct railway communication with many important lines on the south side of the lake, and would help to solve the difficult problem of freight rates by free competition.

With an immense fleet of vessels on Lake Ontario, with barges carrying trains of cars from port to port, and with the products of the west seeking the Atlantic over the city's docks the influences which have retarded the city's growth would soon disappear. Toronto merchants and shippers from inland points have had

frequent occasion to complain of freight rates, and comparisons with the rates out of and into similar cities on the United States side have been decidedly unfavorable.

But this may be attributed in a large measure to an isolated position. If the city would realize the full advantage of its position it must be on the direct commercial highway between the east and the west. The city has been kept off the line of traffic from the interior to the sea, and has been deprived of the advantages of competition which its rivals have enjoyed. Cheaper rates out of American cities have given a balance of advantage that has tended to build up both the distributing centres and the surrounding districts across the line. Cheap transportation is like productive soil or favorable climate, as it increases the rewards of effort. But with a big fleet of vessels on Lake Ontario competing for traffic of all kinds, with easy access to all important lake points, with the grain carriers seeking return cargoes from Montreal, Quebec and Maritime ports, the problem of freight rates both to and from Toronto would be easily solved.

As the city increases in importance, as the volume of its distributing trade increases, as the systems of radial electric railways are perfected the cost of land transportation must decrease, and the comparative advantages enjoyed by United States cities must disappear. With this growth, and the expansion of manufacturing industries, will come cheap transportation to the head of the lakes, and into the rapidly growing Northwest Territories.

THE WORLD'S GREATEST HIGHWAY

These international waters on which Toronto is situated, form the greatest water highway in the world, there is no stretch of navigable water carrying as much commerce as this chain of lakes and rivers. The city is midway between the Gulf and the head of the lakes that drain the commerce of half the continent. Yet the growth of the city has been due so far to other causes. No recent effort has been made to take advantage of this exceptionally favorable situation. The great stream of commerce has been diverted to the southward to build up United States ports. A project to take it by the circuitous channel of the waterway is energetically advocated. The shorter northern route by the Ottawa river is finding favor in spite of the enormous expense involved. By Toronto

UNITE

the centering of their influence elsewhere. The portage railway should not be regarded as a Toronto project, but rather as a national project in which Toronto with other cities is vitally interested. The advantages of perfecting the canal system will be felt from the Atlantic ports to the Rocky Mountains, and throughout that vast area of Canada and the United States commercially tributary to the lakes. Toronto, Montreal, Quebec and other cities are in a good position to make an organized effort towards the accomplishment of this purpose, and if it fails through lack of energy it will be nothing short of a great public misfortune. Prompt action is essential. Every alternative route established, however insignificant its business, will be an influence against the construction of the portage railway. Now that there is no com-

but will touch at centres of trade and industry favorably located. The portage railway route fills this requirement, and the active aid and co-operation of all the leading cities of Eastern Canada will be readily enlisted in furthering its development.

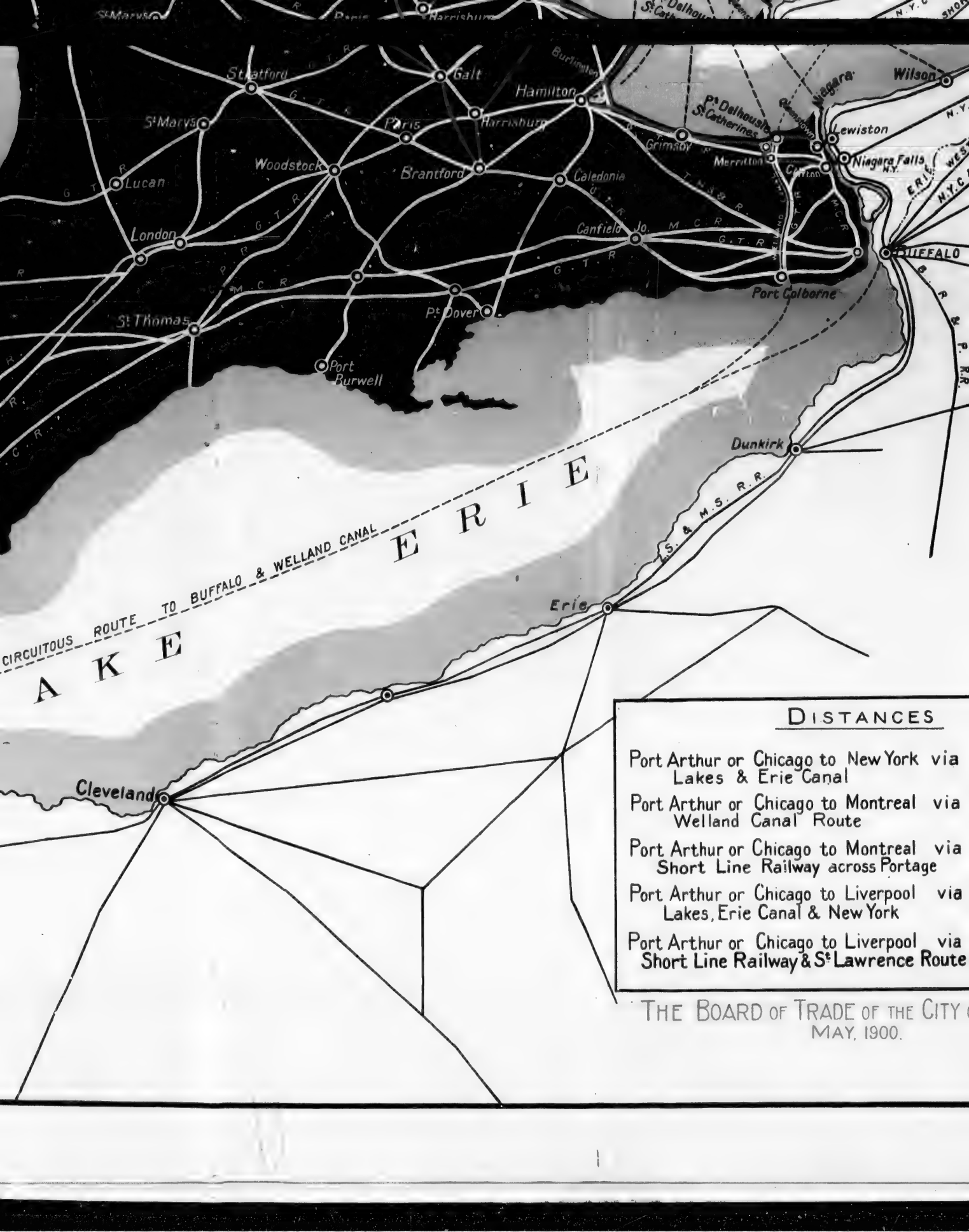
The recent attempt to destroy a lock on the Welland canal with dynamite reveals a source of danger that can be minimized by the establishment of an alternative route of adequate capacity. It is not likely that such a thing will ever occur again, but it has served to direct attention to the possible consequences of an accident to the Welland canal during the rush of grain traffic following the western harvest. The awkward handling of a vessel is liable at any time to carry away a gate, and cause a destructive rush of water. Without a railway connection of adequate capacity across the portage such an accident would deprive Montreal and

EDWARD GURNEY
H. N. BAIRD
R. A. DONALD
WM. INCE, JR.
PELEG HOWLAND
J. F. ELLIS

ROBT. KILDOUR
ELIAS ROGERS
W. F. COCKSHUTT
A. S. IRVING
JAMES D. ALLAN
WM. STONE

JAS. F. MICHIE

St Mary's
Stratford
St Mary's
Lucan
London
Pt Huron
Sarnia
St Thomas
Detroit
Chatham
Windsor
LAKE ST CLAIR
EXISTING CIRCUITOUS ROUTE TO BUFFALO & W
L A K E
Cleveland
Toledo
G T R
M C R
G P R
TORONTO LITH. CO LTD


St Marys
Stratford
Galt
Hamilton
Burlington
Niagara
Wilson
St Marys
Paris
Harrisburg
Pt Dalhousie
St Catherines
Lewiston
Grimsby
Merritton
Niagara Falls N.Y.
Woodstock
Brantford
Caledonia
Lucan
London
Canfield Jo.
BUFFALO
Port Colborne
St Thomas
Pt Dover
Port Burwell
Dunkirk
E R I E
L A K E
CIRCUITOUS ROUTE TO BUFFALO & WELLAND CANAL
L.S. & M.S. R.R.
Erie
Cleveland
G.T.R.
M.C.R.
C.P.R.
T.H.&B.R.
N.Y.C.
B.R.P.&P.R.R.
DISTANCES
Port Arthur or Chicago to New York via Lakes & Erie Canal
Port Arthur or Chicago to Montreal via Welland Canal Route
Port Arthur or Chicago to Montreal via Short Line Railway across Portage
Port Arthur or Chicago to Liverpool via Lakes, Erie Canal & New York
Port Arthur or Chicago to Liverpool via Short Line Railway & St Lawrence Route
THE BOARD OF TRADE OF THE CITY
MAY, 1900.

OF CANADA

MAP

SHEWING THE ROUTE

OF THE

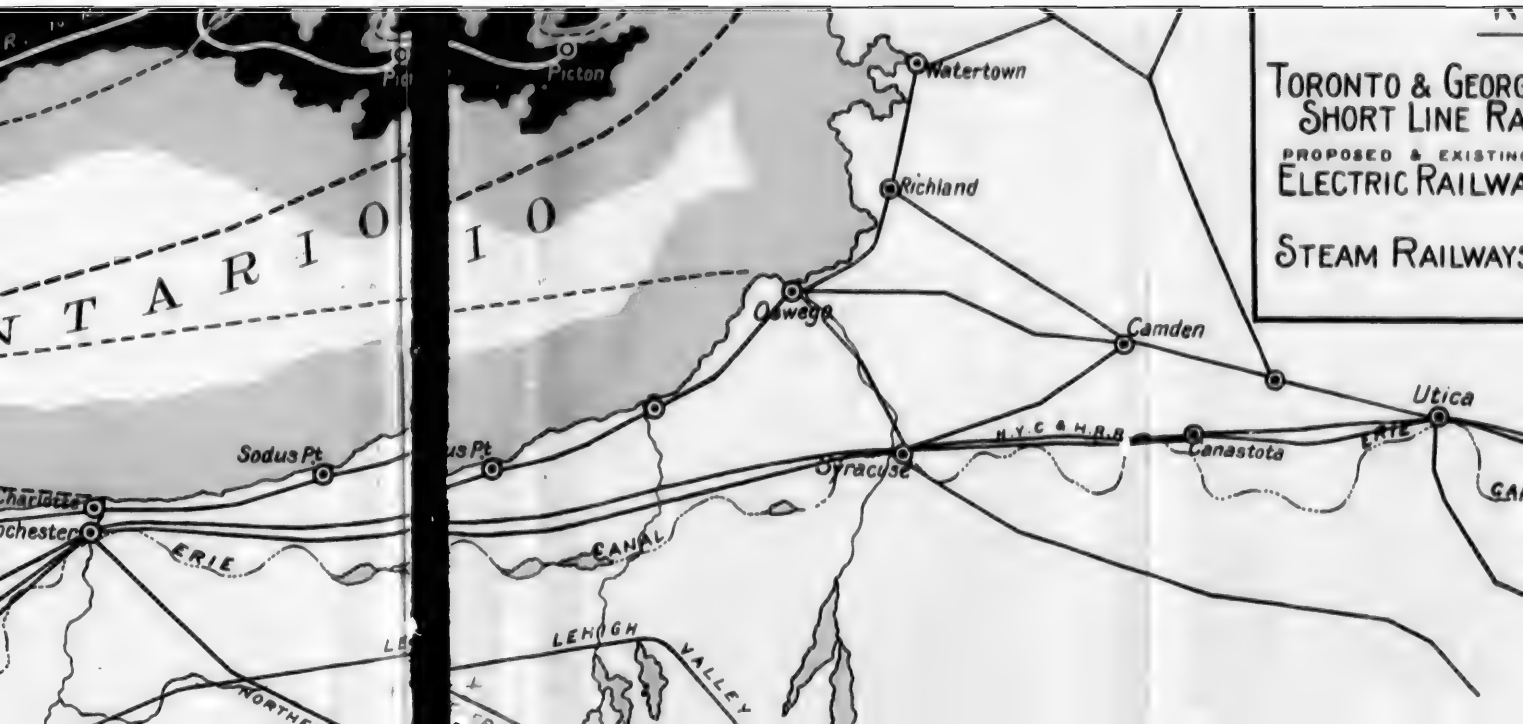
TORONTO & GEORGIAN BA

SHORT LINE RAILW

CONNECTING THE UPPER LAKES

WITH

LAKE ONTARIO AND THE ST LAWRENCE R



P

HE ROUTE

THE

ORGIAN BAY

E RAILWAY

UPPER LAKES

TH

ST LAWRENCE RIVER.

SHORE R.R.

NEW YORK

REFERENCES

TORONTO & GEORGIAN BAY SHORT LINE RAILWAY

PROPOSED & EXISTING ELECTRIC RAILWAYS

STEAM RAILWAYS

Camden

Utica

Canastota

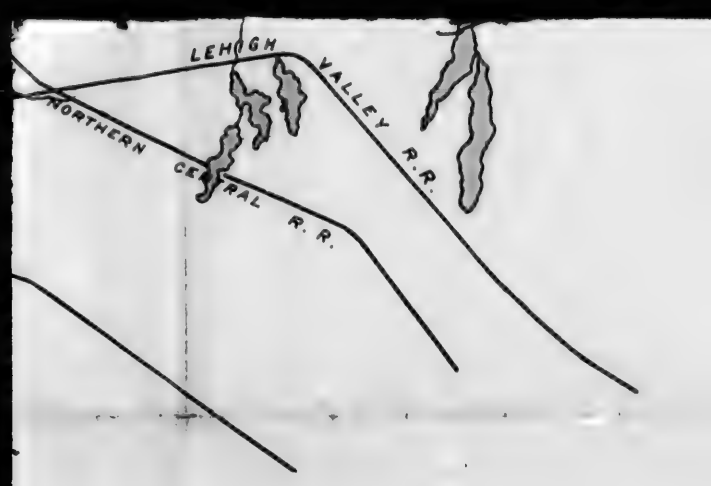
ERIE CANAL

TO ALBANY

Troy

Albany


EXISTING CIRCUITOUS ROUTE TO BUFFALO & WE
L A K E
Toledo
Cleveland
TORONTO LITH. Co LTD
H U R O N
US ROUTE TO BUFFALO & WELLAND CANAL
Bay City
Wiarton
Meaford
Owen Sound
Collingwood
Southampton
Kincardine
Durham
Shelburne
Orangeville
Fergus
Acton
Goderich
Guelph
Elmira
Clinton Sta.
Berlin
Stratford
Galt
G T R



NATIONAL TRANSPO

ATIONAL TRANSPOR

OF CANA

MAP

SHEWING THE

OF TH

TORONTO & GEO

SH SHORT LINE

CONNECTING THE UP

WITH

LA LAKE ONTARIO AND THE ST

DISTANCES	
	MILES
cago to New York via e Canal	1415
cago to Montreal via al Route	1297
cago to Montreal via ilway across Portage	995
cago to Liverpool via nal & New York	4915
cago to Liverpool via ay & St Lawrence Route	4125

F TRADE OF THE CITY OF TORONTO,
MAY, 1900.

RANSPORTATION HIGHWAY

OF CANADA

MAP

WING THE ROUTE

OF THE

TO & GEORGIAN BAY

LINE RAILWAY

CTING THE UPPER LAKES

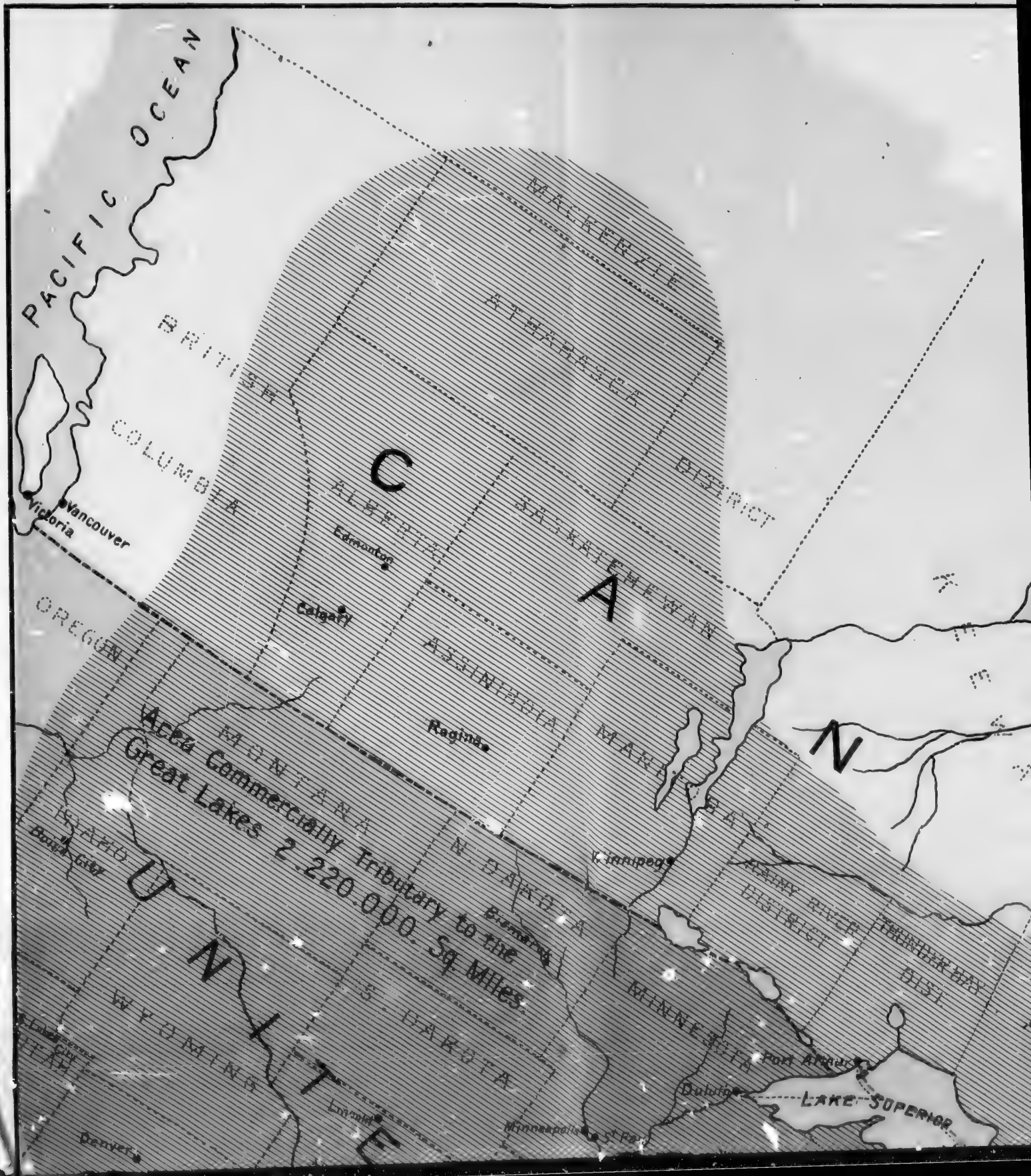
WITH

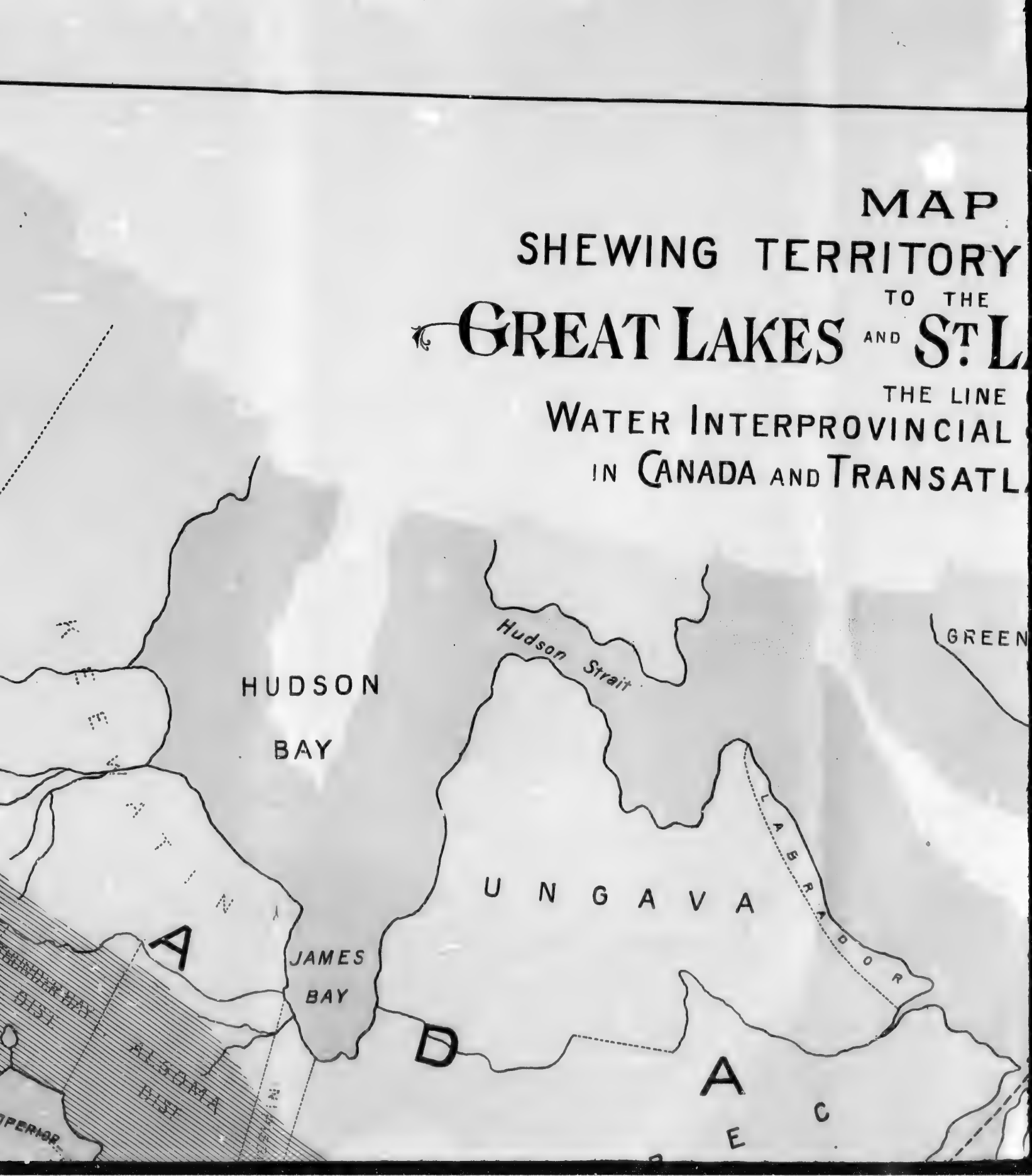
ARIO AND THE ST LAWRENCE RIVER.

DISTANCES

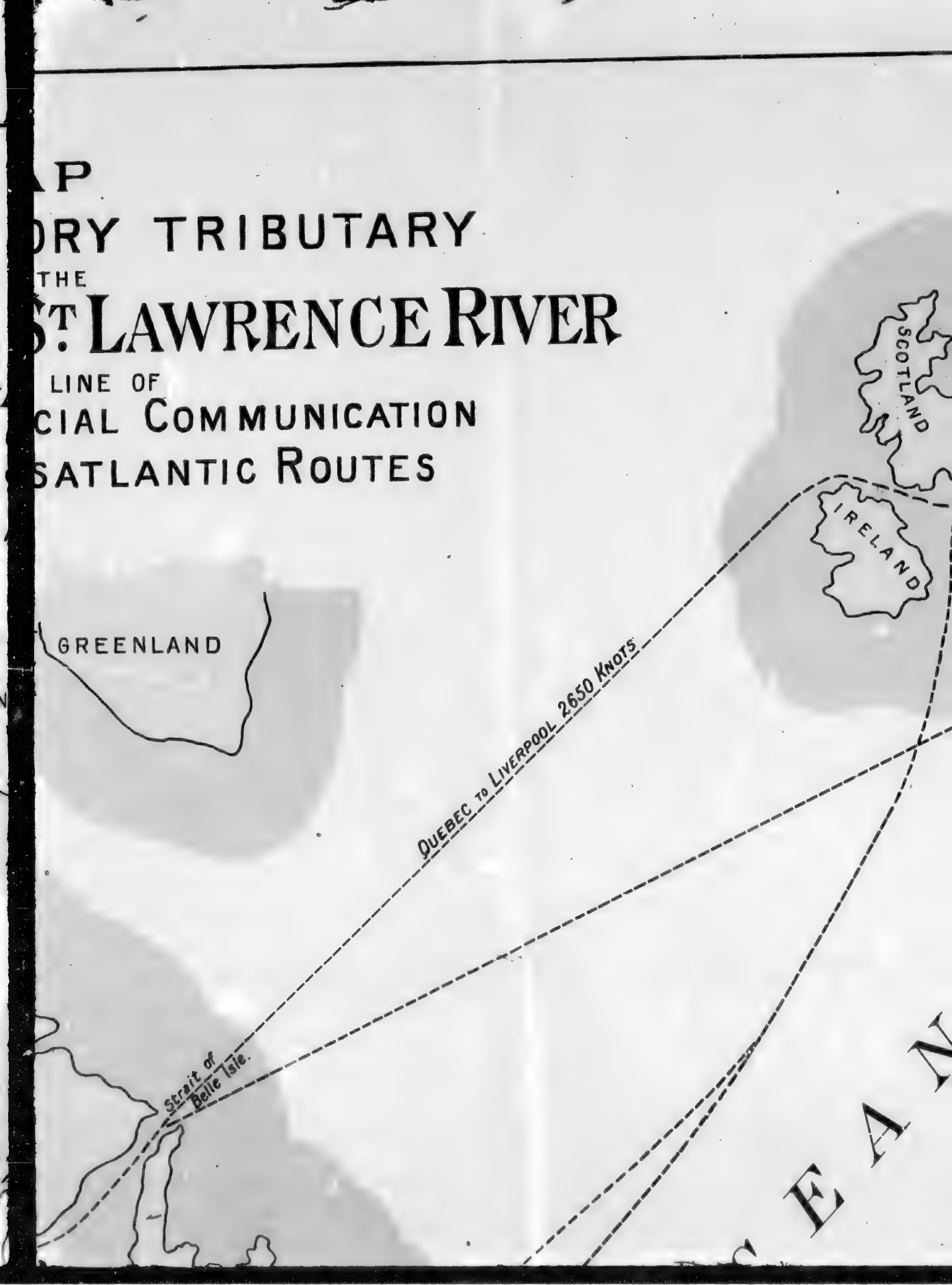
	MILES
Port Arthur or Chicago to New York via Lakes & Erie Canal	1415
Port Arthur or Chicago to Montreal via Welland Canal Route	1297
Port Arthur or Chicago to Montreal via Short Line Railway across Portage	995
Port Arthur or Chicago to Liverpool via Lakes, Erie Canal & New York	4915
Port Arthur or Chicago to Liverpool via Short Line Railway & St Lawrence Route	4125

THE BOARD OF TRADE OF THE CITY OF TORONTO,
MAY, 1900.

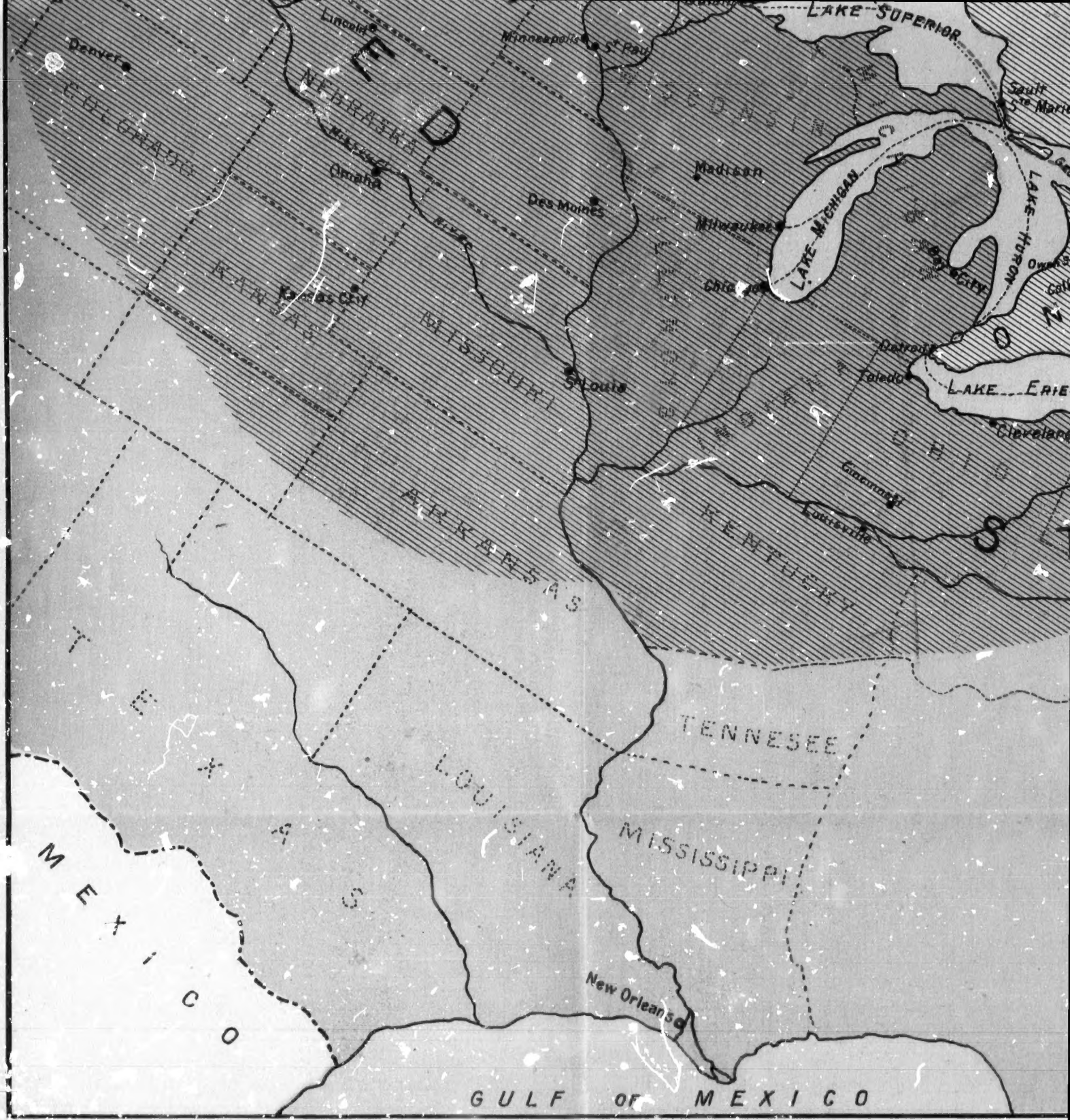

PACIFIC OCEAN
BRITISH COLUMBIA
MACKENZIE
ATHABASCA
DISTRICT
SASKATCHEWAN
ALBERTA
MANITOBA
C A N A D A
Victoria
Vancouver
Edmonton
Calgary
Regina
Winnipeg
OREGON
MONTANA
N. DAKOTA
S. DAKOTA
MINNESOTA
WYOMING
UTAH
Boise City
Salt Lake City
Denver
Omaha
Minneapolis
St Paul
Duluth
Port Arthur
LAKE SUPERIOR
KEEWATIN DISTRICT
THUNDER BAY DIST.
Area Commercially Tributary to the Great Lakes 2,220,000 Sq. Miles.
U N I T E


MAP
SHEWING TERRITORY
TO THE
GREAT LAKES AND ST. L
THE LINE
WATER INTERPROVINCIAL
IN CANADA AND TRANSATL
HUDSON
BAY
Hudson Strait
GREEN
UNGAVA
LABRADOR
JAMES
BAY
ALGOMA
DIST.
A
D
A
C
E

AP
ORY TRIBUTARY
THE
ST. LAWRENCE RIVER
LINE OF
CIAL COMMUNICATION
SATLANTIC ROUTES

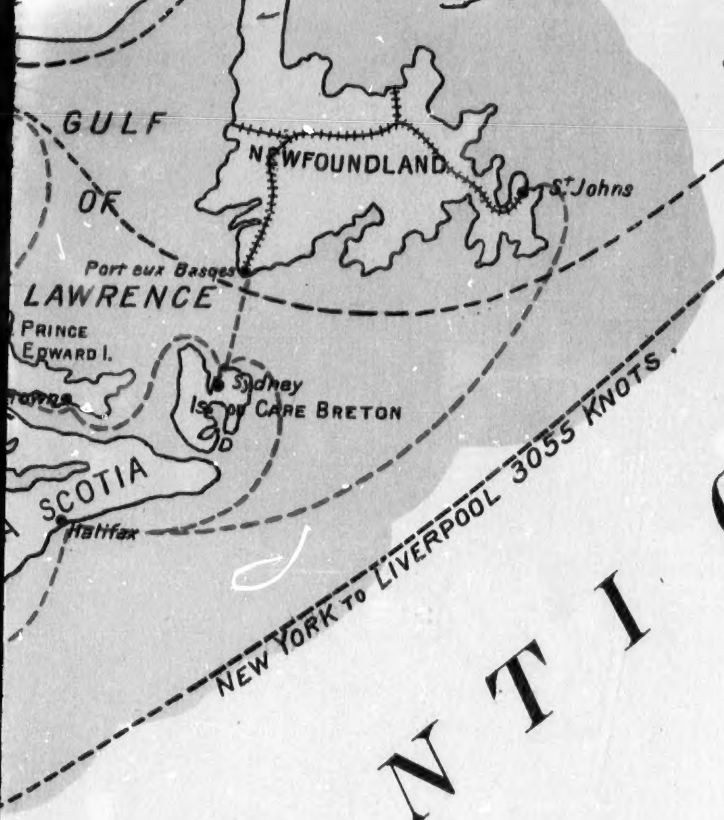



SCOTLAND
ENGLAND
IRELAND
LONDON
Liverpool
FRANCE
Brest
SPAIN
PORTUGAL
Strait of Gibraltar
EAN



Toronto Lithographing Co. Ltd.


QUEBEC
ONTARIO
Sault Ste Marie
Georgian Bay
Lake Huron
Owen Sound
Collingwood
Bay City
Quebec
Three Rivers
Ottawa
Montreal
St. Lawrence River
Gulf of St. Lawrence
Port aux Basques
Prince Edward I.
New Brunswick
Charlottetown
St. John
Nova Scotia
Halifax
Toronto
Kingston
Lake Ontario
Hamilton
Rochester
Oswego
Buffalo
Syracuse
Lake Erie
Cleveland
Erie
Albany
Portland
Boston
New York
Philadelphia
Baltimore
Washington
Maine
Pennsylvania
New York
Ohio
STATES
ATL



A T L A N T I C

O C

Dis
Port Arthur or Chicago t Lakes & Erie Can
Port Arthur or Chicago t Welland Canal Ro
Port Arthur or Chicago t Short Line Railway
Port Arthur or Chicago t Lakes, Erie Canal &
Port Arthur or Chicago t Short Line Railway & St

THE BOARD OF TRA
MA

DISTANCES

	MILES
or Chicago to New York via & Erie Canal	1415
or Chicago to Montreal via nd Canal Route	1297
or Chicago to Montreal via Line Railway across Portage	995
or Chicago to Liverpool via Erie Canal & New York	4915
or Chicago to Liverpool via e Railway & St Lawrence Route	4125

ARD OF TRADE OF THE CITY OF TORONTO,
MAY, 1900.